

## Expanding Production of Cannabis in Iowa

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### Abstract

Following passage of Senate Bill 2360 “*Medical Cannabidiol Act*” in Iowa, possession of Cannabidiol Oil become legal for patients who suffered from intractable epilepsy. The law became effective July 1, 2014, however, patients who were diagnosed by neurologist and prescribed Cannabidiol were still unable to legally access the medication in Iowa. The Controlled Substance Act still lists Cannabis and any of its components, as illegal for possession per federal law. States such as Colorado, Minnesota, and Illinois have legalized production and growing in their individual states. However, unlike the other states, Iowa’s legislation still does not permit the production and distribution of Cannabidiol Oil in the state. Thus, attention is focused on raising awareness of the medical benefits of cannabis and finding a solution to allow patients and their caregivers to legally obtain this medication in the Iowa.

### **Overview of the Problem**

Cannabidiol oil has been shown to be an effective method in treating seizures. In preliminary research, it has shown some effectiveness in the treatment of seizures and for some patients, it is associated with a reduced rate of adverse effects compared to other traditional medications. For patients with seizures, particularly those characteristic of epilepsy, Cannabidiol oil may be an alternative medication for patients who are retractable to other medications. Cannabidiol oil is an extract from the cannabis plant that contains high levels of cannabidiol (CBD) and low levels of tetrahydrocannabinol (THC). In April of 2014 the Iowa Senate passed the Medical Cannabidiol Act Bill, File 2360 with a vote of 36-12. The bill passed with unanimous votes from the Democratic Party, as well as support from ten members of the Republican Party. At the time the approval rating from Iowans for medical cannabis was at 58%.

Prior to July 1, 2014 it was illegal to use or possess any form of cannabis including cannabidiol oil in the state of Iowa. Iowa passed the Medical Cannabidiol Act which went into effect on July 1, 2014. The Medical Cannabidiol Act allows patients suffering from seizures characteristic of epilepsy to possess and use cannabidiol oil within the state. Under the law, patients and designated caregivers may possess thirty-two ounces or a six month supply of cannabidiol at a time, so long as they obtained a state-issued medical cannabis license following the recommendation of a registered Iowa neurologist. In accordance to the law, cannabidiol oil has to have a THC level of 3% or lower for it to be legal for possession and use within the state. However, the Medical Cannabidiol Act currently does not allow patients or caregivers to produce or purchase cannabidiol oil in Iowa. This caveat in the law requires patients to travel to other states and purchase cannabidiol oil and transport it back to Iowa. Transporting cannabidiol oil across state lines is a violation against the federal Controlled Substance act, which places

patients or caregivers in a legal dilemma in order to obtain their medication (Iowans for Medical Marijuana, 2015).

Under the current law only those who have been diagnosed with seizures characteristic of epilepsy are permitted to possess and use cannabidiol oil. Cannabidiol oil is currently being studied for efficacy in managing many other diseases such as cancer, Parkinson's disease and HIV/AIDS. Supporters of medicinal cannabis and medicinal cannabidiol oil are encouraging expansion of the Medical Cannabidiol Act to include disease states such as those previously listed. Encompassing other disease states that may benefit from the use of medical cannabidiol oil would create a more succinct and proficient law, rather than creating legislation for each individual disease state (Lyes, 2015).

Within the Iowa legislature, File 484 was recently introduced, and the bill moved on to the senate floor March 26<sup>th</sup>, 2015. File 484 would address some of the gaps in the current Medical Cannabidiol Act. The new bill would expand upon the current law to include conditions such as cancer, Parkinson's disease, HIV/AIDS, multiple sclerosis, Crohn's disease, glaucoma, hepatitis C, ALS, Ehlers-Danlos syndrome, PTSD and severe chronic pain. Along with encompassing additional disease states which cannabidiol oil may be indicated to treat, File 484 would also provide a more efficient and less invasive way for patients and caregivers to access cannabinoid oil. It is proposed that a medical advisory board would be established in order to allow the cultivation, production and dispensing of the cannabidiol oil within Iowa (Moore, 2015).

### **Rescheduling Marijuana for Legal Production**

The Comprehensive Drug Abuse Prevention and Control Act of 1970, short title Controlled Substance Act, was signed into law on October 27, 1970. The law defines the legal

delineations, regulations, and penalties for the federal government. The law created five schedules or classifications for medications which were believed to have “addicting” properties as defined by the Drug Enforcement Administration (DEA) and Food and Drug Administration (FDA) (Controlled Substances Act, 2009). At the time of and as it currently stands, the Controlled Substance Act classifies marijuana as a Schedule I controlled medication. Under the Schedule I classification, “marihuana” and tetrahydrocannabinols are categorized as hallucinogenic substances. According to the Controlled Substance Act, “marihuana” is defined as “all parts of the plant *Cannabis sativa* L., whether growing or not; the seed thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin” (Controlled Substances Act, 2009).

The Controlled Substance Act defines a Schedule I controlled substance as, “(A) The drug or other substance has a high potential for abuse. (B) The drug or other substance has no currently accepted medical use in treatment in the United States. (C) There is a lack of accepted safety for use of the drug or other substance under medical supervision” (Controlled Substances Act, 2009). Due to its lack of medical use, possession of any amount of a Schedule I controlled substance is subject to a fine and/or imprisonment as defined by the Controlled Substance Act.

Each state maintains its own controlled substance regulations. In the state of Iowa, controlled substances are regulated by the Iowa Administrative Code 657 and Chapter 124. In the incidence that state and federal laws conflict, the more stringent law is considered legally binding. According to Iowa Code Chapter 124, marijuana is defined as a Schedule I controlled substance under the definition of a hallucinogenic substance. “Any material, compound, mixture, or preparation, which contains any quantity of the [hallucinogenic substance], which contain any of its salts, isomers, and salts of isomers” is considered illegally to have possession of unless

“otherwise provided by rules of the board for medicinal purposes” (Iowa Code. Controlled Substances. ch 124, 2009). Possession of marijuana for medicinal purposes is defined under the Medical Cannabidiol Act which passed on May 30, 2014. The Medical Cannabidiol Act only defines the requirements and limitations to the possession of the Cannabidiol registration card. (Medical Cannabidiol Act, 2014). Thus, any production or possession outside of the Act are a violation against Iowa Code and its definition of a Schedule I controlled substance.

For production of cannabis oil to be legal in the state of Iowa, marijuana would have to be reclassified from a Schedule I controlled substance to a Schedule II controlled substance. Therefore, the drug would fall under Schedule II regulations that allow it to be manufactured, distributed, and dispensed in the state legally. Under the Iowa Administrative Code 657, regulations have already been established on production of controlled medications within the state. Schedule II substances are defined by the Controlled Substance Act as, “(A) The drug or other substance has a high potential for abuse. (B) The drug or other substance has a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions. (C) Abuse of the drug or other substance may lead to severe psychological or physical dependence” (Controlled Substances Act, 2009).

Notably, any state that has reclassified marijuana or any of its derivatives is still in violation of the federal law and the Controlled Substance Act. President Barack Obama publically announced that “states that have legalized the substance should not be a top priority of federal law enforcement officials prosecuting the war on drugs” (Dwyer, 2012). Attorney General Eric Holder made similar remarks saying, "It will not be a priority to use federal resources to prosecute patients with serious illnesses or their caregivers who are complying with state laws on medical marijuana, but we will not tolerate drug traffickers who hide behind claims

of compliance with state law to mask activities that are clearly illegal” (Office of Public Affairs, 2014)

### **Iowa’s Legislation Compared to Other States**

In the United States, there are currently four states that have legalized both the medicinal use and recreation use of the marijuana; Alaska, Colorado, Oregon, and Washington. There are nineteen other states that have just legalized the use of medicinal cannabis; Arizona, California, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, Rhode Island and Vermont (State Marijuana Laws Map, 2015). Eleven other states have approved laws allowing for medical cannabis, but only in the extract form: Alabama, Florida, Iowa, Kentucky, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Utah and Wisconsin (Iowans for Medical Marijuana, 2015). In accordance to the Controlled Substance Act, no federal regulations dictate the manufacturing, distribution, prescribing, or dispensing of the Schedule I controlled substance. Each state that has elected to amend their state’s constitution has done so by creating legislation that is unique for that state. While some states have similar policies and regulations, there is a wide variation between each state. To compare these differences, we will focus on the legislation from California, Colorado (prior to recreational use), Minnesota, and Illinois and how they compare to Iowa’s current legislation

### **Difference in Legislation Approval**

State legislation can be created or amended by multiple methods. States electing to legalize cannabis for medical purposes have utilized different methods to amend their constitutions. California was the first state in the nation to legalize cannabis for medical use. On November 5, 1996 the general public voted to approve Ballot Proposition 215 which formally

created the Compassionate Use Act of 1996 (Compassionate Use Act of 1996, 1996).

California's Congress amended the Act to regulate production and possession of medical cannabis by passing the Senate Bill 420 in 2003 (Compassionate Use Act of 1996, 2003).

Similarly, Colorado passed legislation on November 7, 2000 when the general public voted to approve Ballot Amendment 20 (Colorado Senate Bill 109, 2010).

Nine years later, Colorado's Congress passed House Bill 1284 and Senate Bill 109. The House Bill 1284 further regulated production and dispensing procedures for medical cannabis (Colorado Medical Marijuana Code, 2009). The Senate Bill 109 enhanced legislation "concerning regulation of physician-patient relationship for medical cannabis patients, and making appropriations in connections therewith" (Colorado Senate Bill 109, 2010). Minnesota passed the Medical Cannabis Bill on May 29, 2014. The legislation, SF 2470, was approved by the state's legislature rather than a ballot measure (Minn. S.F. No. 2470, 2014). Illinois' medical cannabis bill, The Compassionate Use of Medical Cannabis Pilot Program, was approved on August 1, 2013 by the state's Congress (Compassionate Use of Medical Cannabis Pilot Program Act, 2013). Similar to how Minnesota and Illinois passed their medical cannabis legislation, Iowa's Congress passed SF 2360 on May 16, 2014 creating the Medical Cannabidiol Act (Medical Cannabidiol Act, 2014).

### **Differences in Protected Disease States**

Each state's legislation has granted different medical conditions or diseases the privilege to possess and consume medical cannabis. Iowa's legislation only allows cannabidiol oil to be prescribed to patients with intractable epilepsy. Intractable epilepsy is defined as, "epileptic seizure disorder for which standard medical treatment does not prevent or significantly



ameliorate recurring, uncontrolled seizures or for which standard medical treatment results in harmful side effects” (Medical Cannabidiol Act, 2014).

When California first passed their legislation, the medical conditions allowed to be prescribed medical cannabis were, “cancer, anorexia, AIDS, chronic pain, spasticity, glaucoma, arthritis, migraine, or any other illness for which cannabis provides relief” (Compassionate Use of Medical Cannabis Pilot Program Act, 2015). Colorado legislation cited approved diseases as “debilitating medical conditions” which included “cancer, glaucoma, positive status for human immunodeficiency virus (HIV) or acquired immune deficiency syndrome (AIDS), or treatment of medical conditions including but not limited to, severe pain, severe nausea, and seizures, including those that are characteristics of epilepsy.” (Colorado Constitution ARTICLE XVIII, 2015).

Minnesota’s list of qualified medical conditions that can receive medical cannabis are, “cancer, glaucoma, HIV/AIDS, Tourette’s syndrome, amyotrophic lateral sclerosis, seizures, including those characteristic of epilepsy, severe and persistence muscle spasms, including those characteristic of multiple sclerosis, Crohn’s disease, terminal illnesses with a probable life expectancy of less than one year” (Minn. S.F. No. 2470, 2014).

Illinois’s legislation includes an extensive and specific list of debilitating medical conditions, including “cancer, glaucoma, HIV/AIDS, hepatitis C, amyotrophic lateral sclerosis, Crohn's disease, agitation of Alzheimer's disease, cachexia/wasting syndrome, muscular dystrophy, severe fibromyalgia, spinal cord disease, including but not limited to arachnoiditis, Tarlov cysts, hydromyelia, syringomyelia, rheumatoid arthritis, fibrous dysplasia, spinal cord injury, traumatic brain injury and post-concussion syndrome, multiple sclerosis, Arnold-Chiari malformation and Syringomyelia, Spinocerebellar Ataxia (SCA), Parkinson's, Tourette's,

myoclonus, dystonia, reflex sympathetic dystrophy, causalgia, CRPS, Neurofibromatosis, chronic inflammatory demyelinating polyneuropathy, Sjogren's syndrome, lupus, interstitial cystitis, myasthenia gravis, hydrocephalus, nail-patella syndrome, and residual limb pain” (Compassionate Use of Medical Cannabis Pilot Program Act, 2013). On July 20, 2014 the law Act was amended adding “seizures (including those characteristic of epilepsy)” as a listed debilitating medical condition.

### **Differences in Dosage Forms**

Iowa’s Medical Cannabidiol Act only permits the use and possession of cannabidiol oil. The Act only allows cannabidiol to be recommended by a neurologist if it is produced for “oral or transdermal administration” (Medical Cannabidiol Act, 2014). Cannabidiol can be manufactured into various dosage forms for patients to administer the medication such oils, smokable forms, and edibles.

Minnesota allows for a wider array of dosage forms, but it does not allow for any part of the cannabis plant to be smoked unless it is in an extract form. The legislation defined medical cannabis as, “whole plant extracts and resin and is delivered in the form of (1) liquid, including, but not limited to, oil; (2) pill; (3) vaporized deliver method with use of liquid or oil but which does not require the use of dried leaves or plant” (Minn. S.F. No. 2470, 2014). California, Colorado, and Illinois allow for the consumption of medical cannabis in any form, including smoking the leaves of the plant.

One exception is patients younger than eighteen in Illinois are only approved to possess a non-smokable form of cannabis. “Registered qualifying patients under 18 years of age shall be prohibited from consuming forms of cannabis other than medical cannabis infused products” (Compassionate Use of Medical Cannabis Pilot Program Act, 2015).

### **Differences in Possession Amounts**

In Iowa, the Medical Cannabidiol Act only allows patients or caregivers to possess a maximum of thirty-two ounces of cannabidiol oil at a time. The maximum of thirty-two ounces is approximately a six month supply (Medical Cannabidiol Act Registration Card Program, 2014).

In Minnesota, possession of medical cannabis is limited to a month supply. A month supply is determined by the physician for the specific patient (Minn. S.F. No. 2470, 2014). For Illinois patients, legislation defines maximum amount to possess as an “adequate supply” which is defined as “2.5 ounces of usable cannabis during a period of 14 days and that is derived solely from an intrastate source” (Compassionate Use of Medical Cannabis Pilot Program Act, 2015). A physician may submit an appeal with substantial medical basis if the defined adequate supply is insufficient for a fourteen day supply on a patient.

In states such as Colorado and California, patients or caregivers are also permitted to grow their own marijuana plants. In these situations, medical cannabis legislation also limits the possession of cannabis plants a patient can have. For Colorado, patients are able to possess no more than two ounces of a usable form of cannabis at a time and no more than six marijuana plants; three mature and three immature. (Colorado Constitution ARTICLE XVIII, 2015).

In California the maximum allowance is defined as “no more than eight ounces of dried marijuana per qualified patient. In addition, a qualified patient or primary caregiver may also maintain no more than six mature or twelve immature marijuana plants per qualified patient. If a qualified patient or primary caregiver has a doctor's recommendation that this quantity does not meet the qualified patient's medical needs, the qualified patient or primary caregiver may possess

an amount of marijuana consistent with the patient's needs” (Compassionate Use Act of 1996, 2003).

### **Differences in Regulation**

In all states passing legislation of the use of medical cannabis, patients are required to apply to a registry program in order to obtain a registration card. In Iowa, the jurisdiction to carry out the Medicinal Cannabidiol Act is possessed by the state’s Department of Public Health and the Department of Transportation. The Department of Public Health reviews a patient’s application, completes background checks on the patient and neurologist, and determines whether or not to grant a patient a Cannabidiol Registration Card. The Department of Public Health then corresponds with the Department of Transportation which issues the registration card (Medical Cannabidiol Act, 2014).

Similarly, Minnesota’s medical cannabis registry program is overseen by the Commissioner of Health under the authority of the Public Health Department, who also oversees the regulations regarding the dispensing, manufacturing, or prescribing of medical cannabis in the state (Minn. S.F. No. 2470, 2014). California imposed various duties upon County Health Departments relating to the issuance of identification cards, thus creating a state-mandated local program. The State Department of Health Services holds the responsibility to establish and maintain a database for patients issued identification cards by the County Health Departments, as well as establish procedures under which a qualified patient with an identification card may use cannabis for medical purposes and the fees associated with the application process (Compassionate Use Act of 1996, 2003).

During the period that only medicinal cannabis was legal in Colorado, the State Health Agency held the responsibilities and duties to regulate and approve registration cards for patient

apply for medicinal cannabis (Colorado Constitution ARTICLE XVIII, 2015). Following the legalization of cannabis for recreational use, any cannabis-containing product, for recreational use or medicinal use, is regulated by the Marijuana Enforcement Division. The Division is under the authority of the Department of Revenue (Colorado Department of Revenue, 2015). Illinois regulation is divided between two state agencies. The Department of Public Health has the authority to oversee the application process for patients apply for the registry program. The Department of Agriculture oversees the production, distribution, and wholesale of cannabis used for medicinal purposes in the state (Compassionate Use of Medical Cannabis Pilot Program Act, 2013).

### **Local Option**

In Colorado the House Bill 1284 included a “local option” which stated, “This article shall be statewide unless a municipality, county, city....by either a majority of the registered electors of the municipality, county, or city voting at a regular election or special election...vote to prohibit the operation of medical cannabis centers” (Colorado Medical Marijuana Code, 2009). The local option also allowed local governments to establish additional regulation upon medical cannabis centers such as on the operation, location, and ownership of the centers.

In California’s Senate Bill 420, the state’s legislation gave counties and cities the ability to adapt local cannabis cultivation into local governing ordinances. “Counties and cities may retain or enact medical cannabis guidelines allowing qualified patients or primary caregivers to exceed the state limits set forth in subdivision (a).” This refers to the amount of mature or immature marijuana plants a patient or primary caregiver may maintain, which was set by the state at no more than six mature or 12 immature marijuana plants per qualified patient (Compassionate Use Act of 1996, 2003).

### **Unique Legislation within Minnesota’s Cannabis Laws**

Legislation from Minnesota structured the production and distribution of medical cannabis to be done by two approved in-state manufacturers rather than separate medical cannabis clinics or dispensaries. Medical cannabis manufacturers have been provided with the duty to “cultivate, acquire, manufacture, possess, prepare, transfer, transport, supply, or dispense medical cannabis, delivery devices, or related supplies and educational materials” (Minn. S.F. No. 2470, 2014). The two manufacturers are chosen by the Commissioner of Health to be able to provide the services for the state of Minnesota.

The legislation also initiated a task force, made up of 23 members, to assess medical cannabis therapeutic research. The task force has been aimed at analyzing, “program design and implementation, the impact on the health care provider community, patient experiences, the impact on the incidence of substance abuse, access to and quality of medical cannabis and medical cannabis products, the impact on law enforcement and prosecutions, public awareness and perception, and any unintended consequences” (Minn. S.F. No. 2470, 2014).

### **Unique Legislation within Illinois’s Cannabis Laws**

The process of manufacturing and dispensing medical cannabis in Illinois is divided between two key components: the cultivators and the dispensing organizations. Cultivators or cultivation centers are defined as “a facility operated by an organization or business that is registered by the Department of Agriculture to perform necessary activities to provide only registered medical cannabis dispensing organizations with usable medical cannabis” (Compassionate Use of Medical Cannabis Pilot Program Act, 2015). After raising and harvesting the medical cannabis, cultivation centers sell their crop to dispensing organizations. Dispensing organizations are defined as, “a facility operated by an organization or business that is registered

by the Department of Financial and Professional Regulation to acquire medical cannabis from a registered cultivation center for the purpose of dispensing cannabis, paraphernalia, or related supplies and educational materials to registered qualifying patients” (Compassionate Use of Medical Cannabis Pilot Program Act, 2015). Under Illinois’s legislation, a new tax was created to generate revenue for the state in addition to previous state tax requirements. The “Medical Cannabis Cultivation Privilege Tax” is imposed upon the cultivating center at seven percent of the sale price per every ounce of medical cannabis sold. “The tax shall be paid by a cultivation center and is not the responsibility of a dispensing organization or a qualified patient” (Compassionate Use of Medical Cannabis Pilot Program Act, 2015).

### **Unique Legislation within Colorado’s Cannabis Laws**

The goal of Colorado’s Senate Bill 109 was to reduce fraud and abuse of the system and limit medical cannabis to patients whom it was medically necessary. The legislation also aimed to have patients establish a patient-provider relationship and have a physical examination completed before being prescribed medical cannabis. “After a physician, who has a bona fide physician-patient relationship with the patient applying for the medical cannabis program, determines, for the purposes of making a recommendation, that the patient has a debilitating medical condition and that the patient may benefit from the use of medical cannabis, the physician shall certify to the state health agency that the patient has a debilitating medical condition and that the patient may benefit from the use of medical cannabis” (Colorado Senate Bill 109, 2010). Any physician who had issues with the Drug Enforcement Agency (DEA) or the state medical licensing board would not be allowed to prescribe. “Good standing, with respect to physician license, means: the physician holds a doctor of medicine or doctor of osteopathic medicine degree from an accredited medical school; the physician holds a valid, unrestricted

license to practice medicine in Colorado; and the physician has a valid and unrestricted Federal Drug Enforcement Administration controlled substances registration” (Colorado Senate Bill 109, 2010). Lastly, the bill aimed to ensure physicians did not have a financial relationship with a medical cannabis center. “A physician shall not...hold an economic interest in an enterprise that provides or distributes medical cannabis if the physician certifies the debilitating medical condition of a patient for participation in the medical cannabis program” (Colorado Senate Bill 109, 2010). Further regulations were placed on who could own a medical cannabis center and where the medical cannabis center could be located. For example, applicants must be older than twenty-one years old, not be a licensed physician making patient recommendations, be in good standing by paying annual fees and be able to produce a surety bond, and not be employed, assisted or financed by a person who has a criminal history. Locations must not be within one thousand feet of a school, alcohol or drug treatment facility, principal campus of a college or university, or seminary, or residential child care facility (Colorado Senate Bill 109, 2010).

### **Benefits of Rescheduling Marijuana**

#### **Medical Benefits**

Cannabis and its derivatives have been used for medicinal purposes for centuries. Cannabis had FDA approved uses and was in the United States Pharmacopeia until 1942. The two main elements found in cannabis are tetrahydrocannabinol (THC) and cannabidiol (CBD). Both have proven medical benefits but unlike the THC, cannabidiol does not have the euphoric or “high” effect that is seen with THC. Cannabidiol has medicinal benefits because the human body has specific cannabinoid receptors for it to act upon. Cannabinoid receptors are found in the spinal cord and other parts of the body. When they are activated they are able to control parts of the nervous system, suppress the immune system, and have anti-inflammatory effects. Due to its



current classification as a Schedule I drug in most states, research on the use of cannabis for medicinal purposes is limited. However, studies have proven to be promising and as cannabis' legal status continues to change from schedule I to Schedule II in many states, the amount of studies being initiated have increased drastically. Studies done by the Institute of Medicine (IOM) found that cannabis has statistically significant anti-nausea and appetite stimulating effects. This research led to the development and FDA approval of the drug Marinol (dronabinol). Marinol is a synthetic form of THC formulated into an oral capsule that is approved for "severe weight loss associated with AIDS (HIV/AIDS wasting) and nausea and vomiting associated with chemotherapy for patients who fail to respond to other antiemetics" (American College of Physicians, 2008).

The antiemetic effects of cannabis and its derivatives are the most studied thus far. The review article *Cannabinoids in medicine: A review of their therapeutic potential* published in the Journal of Ethno-Pharmacology looked at 15 different studies that examined the effectiveness of Nabilone, a synthetic form of THC, in treating chemotherapy induced nausea and vomiting. The consensus from these studies was that Nabilone was, "significantly superior to prochlorperazine, domperidone and alizapride for treating nausea and vomiting associated with cancer chemotherapy" (Amar, 2006). The previously listed medications are traditional drugs used to prevent nausea. There are also newer agents (selective 5-HT<sub>3</sub> receptor antagonists) on the market that are proven to be superior to synthetic THC agents because there is no risk of psychological side effects and are able to be given intravenously. However, agents, like Nabilone, are still acceptable alternatives when a 5-HT<sub>3</sub> receptor antagonist is contraindicated or ineffective (Amar, 2006).

Following its antiemetic effects, the appetite stimulating effects of the oral THC are the second most studied effects. Its appetite stimulating effects have been used in cancer patients and those with AIDS wasting syndrome. Their use has been proven to slow chronic weight loss associated with these disease states. Clinical trials for dronabinol showed that compared to the placebo there was statistically significant appetite stimulation and weight stabilization after 4-6 weeks of therapy in patients with AIDS (Amar, 2006).

While its studies are more limited, the use of cannabidiol and oral THC have also proven to be promising in treating pain and spasticity disorders, like multiple sclerosis (MS), which is a disease that attacks the nerve cells in the spinal cord. Due to their ability to act directly in the spinal cord, cannabidiol and THC are proven to relieve symptoms associated with MS such as: muscle rigidity, painful muscle cramps, tremors, and chronic pain and prickling of the hands and feet (Amar, 2006). Currently there is no approved use in the United States, however, Sativex, an oral cannabinoid spray, is available in the UK and has shown improvements in spasticity for patients with MS. It has also been shown to reduce pain and improve quality of sleep for patients with rheumatoid arthritis (GW Pharmaceuticals, 2014). This can also be applied to patients with spinal cord injuries and general pain disorders as they often have symptoms similar to MS and can also benefit from the therapeutic effects of cannabidiol and cannabis derivatives. The American College of Physicians conducted a study that found that, “oral doses of THC resulted in pain reductions similar to that from codeine” (American College of Physicians, 2008). Due to its ability to reduce pain and improve patients’ quality of life, many of these patients chose to self-medicate with cannabis despite lack of FDA approval. While these benefits do not directly support the production and effectiveness of medical cannabis in treating seizures characteristic of

epilepsy, research has proven that cannabis derivatives can be efficacious and have medical benefits for certain disease states.

Epilepsy is a seizure disorder that affects 1% of the world's population. Many of these patients are treated with traditional pharmacologic therapy; however, about 20-30% of these patients do not have adequate control or have retractable epilepsy. Retractable epilepsy means they are still having seizures on a regular basis despite proper medical therapy. Medical cannabis is approved in Iowa to treat seizures characteristic of epilepsy and has shown to improve control in patients with epilepsy. Many neurologists have promoted its use; even those at Mayo Clinic have supported its role in treating patients seen at the clinic (Tauscheck, 2015). Allowing for its production and use in Iowa will open up the opportunity to study its use and effectiveness in other disease states like: Parkinson's disease, post-traumatic stress disorder, Crohn's disease, amyotrophic lateral sclerosis (ALS), as well as others. The medical benefits from these drugs will open up a wider array of treatment options for patients who suffer from these disease states.

### **Taxable Revenue**

Where city and state governments side on the debate of the legislation of cannabis for medical and/or recreational purposes, it is difficult to discount the tax revenues that could be provided to struggling budgets. It is estimated that \$8.7 billion in government expenditures could be saved on the enforcement of prohibition if cannabis was to be legalized in all 50 states (Miron & Waldock, 2010).

Currently, the Iowa Division of Narcotics Enforcement receives \$6.8 million from general fund appropriations. If the State of Iowa expands the current medical cannabis program or legalizes cannabis for recreational purposes, it is feasible to see some savings to the Division's budget, though how much is not known. It is estimated Iowa spends \$36,607 attributable to

cannabis prohibition alone (Miron & Waldock, 2010). The shift would move from enforcement to regulation of the industry and the administration of medical cannabis programs.

It is estimated the State of Iowa could earn \$20 million to \$30 million in revenue from sales and excise taxes if the state were to legalize cannabis (Ferner M. , 2014). In addition to the taxes, the state could receive monies from fees for licensing and for applications into a medical cannabis program. The legalization of cannabis would spin off other revenue generating industries such as coffee houses selling cannabis, gardening equipment to aid in the growing of cannabis and paraphernalia (Gieringer, 1994).

### **Marijuana Possession Penalties**

Currently in Iowa, a first-time offense of possessing five grams or less of marijuana is a serious misdemeanor with confinement for up to six months and a fine of up to \$1,000. (Boshart, 2015). Senate Bill 1121 would reduce the first-offense penalty of possessing up to five grams of marijuana to a simple misdemeanor. This would result in a smaller fine and less possibility for jail time, reducing incarceration costs in Iowa. In Minnesota, it is considered a petty misdemeanor for possessing up to 42.5 grams of marijuana and will be required to take a drug education course (Minn. Code 152.027, 2012). In Illinois, possessing less than 2.5 grams of marijuana is considered a Class C misdemeanor, the lowest form of criminal offense. One cannot be charged to imprisonment for a Class C misdemeanor, but is more often ordered to pay a fine (720 ILCS Cannabis Control Act ch. 56.5. par. 701, 2012). Since Amendment 64 went into effect in Colorado, a person there is able to have up to one ounce of marijuana for person use. It is allowed in vehicles, but cannot be in an open container or taken across state lines (State of Colorado, 2015).

### **Discussion**

After extensive research on medicinal cannabis, our group's conclusion supports legalizing the production of cannabis in the state as well as expansion of the current law. Despite the lack of large scale studies, preliminary research has shown medical benefit from the use of cannabis. Synthetic cannabinoid medications such as Nabilone and Dronabinol are FDA approved and further support its medical benefit. Currently, seizures characteristic of epilepsy is the only disease state approved to legally use cannabidiol oil in Iowa. After assessing other state's laws and regulations, other disease states have the ability to benefit from cannabidiol.

After discussion, we believe disease states such as such cancer, Parkinson's disease, HIV/AIDS, multiple sclerosis, Crohn's disease, glaucoma, amyotrophic lateral sclerosis, and severe chronic pain should be included in Iowa's Medical Cannabidiol Act. The current piece of legislation in Iowa's Congress, File 484 includes these and additional disease states into the new law dependent on it passing in the House of Representative and being signed by Governor Branstad.

Similarly to how cannabis is regulated in other states, our group supports the use of cannabidiol oil only as an end stage alternative or when the patient's disease state is contractible to other medications. Legalizing the production of medical cannabis could provide the state with an additional source of taxable revenue. Iowa still maintains it agriculture roots, which our group feels is part of the justification of why production should be legalized within the state rather than outsourcing and transporting the cannabidiol oil into the state or requiring patients to travel out of state to obtain the oil.

After analyzing and comparing cannabis regulations from California, Colorado, Minnesota, and Illinois, we have selected pieces of each state's legislature regarding manufacture and production that our group feels would be beneficial to incorporate into Iowa's law. Illinois

laws have divided the manufacturing and dispensing of medical cannabis between two of the state agencies. Cultivators and cultivation centers where medical cannabis was being grown are regulated by the Department of Agriculture. To encourage the perception of cannabis being a crop product in Iowa, we believe that Iowa's Department of Agriculture and Land Stewardship should regulate its production. The Department may dictate eligibility for farmers to grow the crop and regulate the quantity grown in the state. This makes cannabis a cash crop for farms to sell to manufacturers which generates profits for farmers within the state and keeps revenues within the state. Under Illinois legislation, farmers can only sell its products to licensed manufacturers in the state and cannot directly sell the product to patients.

Minnesota's legislation also has some benefits we believe in regards to production of cannabidiol oil. Minnesota only allowed licensing for two companies to produce and dispense cannabis products within the state. We believe this allows for easier regulation for state agencies because they only need to regulate two companies rather than countless dispensary centers. These companies can have the cannabis crops provided to them by licensed growers and they can manufacture the cannabis plant into useable cannabidiol oil. The company manufacture plants are required to be within the state of operation, which would allow the profits and revenue to stay within the state.

Minnesota legislation also prohibits consumption of cannabis by smoking dried pieces of the plant. All forms cannabis had to be in a liquid, pill, or oil that could be vaporized. We feel this helps differentiate medicinal cannabis from cannabis for recreational use. This would help create a more positive perception of medicinal cannabis and for the patient prescribed cannabidiol oil for their disease states. Our group did not feel it was necessary for patients or their care givers to grow their own plants for consumption. We believe having the state sponsor

cultivators and manufactures would create a more positive perception and would decrease concerns of its citizens that cannabis is being grown in neighborhoods close to children and we feel it could be diverted to people not licensed to possess cannabis or cannabidiol legally within the state.

Lastly, we found the local option that Colorado and California adopted to be a possible contribution to Iowa's law. Under the local option, cities and counties could adopt regulation in addition to the state laws that would regulate medicinal cannabis. Thus cities and counties that felt it necessary could make it illegal for cultivation centers or manufacturing plants to be located in their jurisdiction. Due to the support of medicinal cannabis only being around 58%, it is assumed that there are regions of the state that would elect to use this option. However, even if some regions of the state do elect to use the local option, patients and care givers still could attain cannabis products in the state in areas that do not choose to use the local option.

In conclusion, we support the expansion of medical cannabis laws in Iowa to include more disease states as well as allow for the cultivation and production of cannabis products within the state. We believe the possibility to generate revenue, decrease incarceration cost in regards to cannabis, and provide a better quality of life for its citizens outweighs the negative perceptions of cannabis. Iowa's adoption of these laws or similar laws would keep it at the forefront of this topic within the country, as well as provide opportunities for the state and for patients.

### References

- 720 ILCS Cannabis Control Act ch. 56.5. par. 701.* (2012). Retrieved from Illinois General Assembly: <http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1937&ChapterID=53>
- Amar, M. B. (2006). Cannabinoids in medicine: A review of their therapeutic potential. *Journal of Ethno-Pharmacology*, 1-21.
- American College of Physicians. (2008). *Supporting Research into the Therapeutic Role of Marijuana*. Philadelphia : American College of Physicians.
- Boshart, R. (2015, February 10). *Reduced penalty for marijuana possession considered by Iowa legislature*. Retrieved from KCRG News: <http://www.kcrg.com/subject/news/reduced-penalty-for-marijuana-possession-considered-by-iowa-legislature-20150210>
- Colorado Constitution ARTICLE XVIII.* (2015, April). Retrieved from Colorado Government: ([https://www.colorado.gov/pacific/sites/default/files/CHEIS\\_MMJ\\_Colorado-Constitution-Article-XVIII.pdf](https://www.colorado.gov/pacific/sites/default/files/CHEIS_MMJ_Colorado-Constitution-Article-XVIII.pdf))
- Colorado Department of Revenue. (2015). *Application and Licensing - Marijuana Enforcement*. Retrieved from Colorado Department of Revenue: (<https://www.colorado.gov/pacific/enforcement/application-and-licensing-marijuana-enforcement>)
- Colorado Medical Marijuana Code.* (2009). Retrieved from ProCon.org: (<http://medicalmarijuana.procon.org/sourcefiles/HB1284CO.pdf>)
- Colorado Senate Bill 109.* (2010, June 7).



*Compassionate Use Act of 1996*. (1996, November 5). Retrieved from

(<http://medicalmarijuana.procon.org/sourcefiles/california-proposition-215.pdf>)

*Compassionate Use Act of 1996*. (2003, September 11). Retrieved from

(<http://medicalmarijuana.procon.org/sourcefiles/SB420.pdf>)

*Compassionate Use of Medical Cannabis Pilot Program Act*. (2013, August 1). Retrieved from

ProCon.org: (<http://medicalmarijuana.procon.org/sourcefiles/Illinois-house-bill-1-enrolled.pdf>)

*Compassionate Use of Medical Cannabis Pilot Program Act*. (2015, January 1). Retrieved from

Illinois General Assembly:

(<http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=098-0775>)

*Controlled Substances Act*. (2009). Retrieved April 06, 2015, from U.S Food and Drug

Administration: <http://www.fda.gov/regulatoryinformation/legislation/ucm148726.htm>

Dwyer, D. (2012, December 12). *Obama: Marijuana Users Not High Priority*. Retrieved from

ABC News: (<http://abcnews.go.com/Politics/OTUS/president-obama-marijuana-users-high-priority-drug-war/story?id=17946783>)

Ferner, M. (2014, September 22). *Marijuana tax revenue may top \$3 billion a year with*

*legalization*. Retrieved from The Huffington Post:

[http://www.huffingtonpost.com/2014/09/22/legal-marijuana-taxes\\_n\\_5863860.html](http://www.huffingtonpost.com/2014/09/22/legal-marijuana-taxes_n_5863860.html)

Gieringer, D. (1994). *Revenues from legalization*. Retrieved from NORML website:

<http://www.norml.org/library/item/revenues-from-legalization>

GW Pharmaceuticals. (2014). *Sativex*. Retrieved from GW Pharmaceuticals:

<http://www.gwpharm.com/sativex.aspx>

*Iowa Code. Controlled Substances. ch 124*. (2009). Retrieved from Iowa Code:

(<https://coolice.legis.iowa.gov/cool-ice/default.asp?category=billinfo&service=iowacode&ga=83&input=124#124.204>)

*Iowans for Medical Marijuana*. (2015, April 7). Retrieved from Iowans for Medical Marijuana:

<http://www.iowamedicalmarijuana.org/>

Lyes, T. (2015, January 26). Retrieved from The Des Moines Register:

<http://www.iowamedicalmarijuana.org/>

*Medical Cannabidiol Act*. (2014). Retrieved from Iowa Code:

(<https://coolice.legis.iowa.gov/cool-ice/default.asp?category=billinfo&service=iowacode&ga=83&input=124#124.204>)

*Medical Cannabidiol Act*. (2014, May 16). Retrieved from ProCon.org:

(<http://medicalmarijuana.procon.org/sourcefiles/iowa-sf2360.pdf>)

*Medical Cannabidiol Act Registration Card Program*. (2014, July 1). Retrieved from Iowa

Department of Public Health: (<https://www.idph.state.ia.us/MCARCP/>).

*Minn. Code 152.027*. (2012). Retrieved from Minnesota Revisor of Statutes:

<https://www.revisor.mn.gov/statutes/?id=152.027>

*Minn. S.F. No. 2470*. (2014, May 29). Retrieved from ProCon.org:

(<http://medicalmarijuana.procon.org/sourcefiles/minnesota-sf2470-3rdengrossment.pdf>)

Miron, J., & Waldock, K. (2010). *The budgetary impact of ending drug prohibition*. Retrieved from Cato Institute website:

<http://www.cato.org/sites/cato.org/files/pubs/pdf/drugprohibitionwp.pdf>

Moore, S. (2015, March 26). Retrieved from WHOTv: <http://whotv.com/2015/03/26/medical-cannabis-bill-moves-to-senate-floor/>

Office of Public Affairs. (2014, September 15). *Attorney General Announces Formal Medical Marijuana Guidelines*. Retrieved from The United States Department of Justice: (<http://www.justice.gov/opa/pr/attorney-general-announces-formal-medical-marijuana-guidelines>)

Scott, J. (2013, November 6). *Will Iowa be the next state to legalize Marijuana?* Retrieved from Iowa State Daily.com: [http://www.iowastatedaily.com/news/article\\_58e10058-4359-11e3-96e3-0019bb2963f4.html](http://www.iowastatedaily.com/news/article_58e10058-4359-11e3-96e3-0019bb2963f4.html)

*State Marijuana Laws Map*. (2015, April 1). Retrieved from Governing The States and Localities: (<http://www.governing.com/gov-data/state-marijuana-laws-map-medical-recreational.html>)

State of Colorado. (2015). *Retail Marijuana Use Within the City of Denver*. Retrieved from Colorado: <https://www.colorado.gov/pacific/marijuanainfodenver/residents-visitors>

Tauscheck, M. (2015, February 14). *Iowa family using medical marijuana hopes to return home*. Retrieved from KCCI News: (<http://www.kcci.com/news/iowa-family-hopes-to-return-home/31268232>)